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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,281	02/25/2004	Mahendra Ladharam Joshi	06332D USA	2433

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AIR PRODUCTS AND CHEMICALS, INC.
PATENT DEPARTMENT
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ALLENTOWN, PA 181951501

EXAMINER

HOGAN, JAMES SEAN

ART UNIT	PAPER NUMBER
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3752

MAIL DATE	DELIVERY MODE
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07/25/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/786,281

Applicant(s)

JOSHI, MAHENDRA LADHARAM

Examiner

James S. Hogan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 11/7, 7/1, 5/27, 2/25
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 2,959,361 to Lingis.

Regarding claim 1, Lingis discloses a nozzle body inlet face (at 16), an outlet face (at 18), and an inlet flow axis passing through the inlet and outlet face (imagined), the nozzle having slots (26,28, 22) going through the nozzle body, parts of the slots (26, 28) having slot axis that are not parallel to the inlet flow axis of the body (see Figure 3). As per claim 2, the nozzle has an inlet pipe (10) connected top the inlet face of the nozzle. As per claim 3, the slots (22, 26, 28) are not parallel to each other. As per the later part of claim 8, none of the slots intersect other slots. As per claim 9, Lingis discloses a slot (22) that intersects the inlet flow axis.

Claim 10-12 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,664,733 to Lott.

As per claim 10, Lott discloses nozzle body inlet face (at 74), an outlet face (at 24), and an inlet flow axis passing through the inlet and outlet face (imagined), the nozzle having slots (50) going through the nozzle body, each slot having an axis (imaginary) wherein a first slot (any, shown in Figure 4) is intersected bay each of the

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other slots and the slot center plane of any of the slots intersects the flow axis of the nozzle body. As per claims 11-12, the center planes of any of the slots intersect the inlet flow axis at an angle of 0°.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 2,959,361 to Lingis in view of U.S. Patent No. 5,664,733 to Lott.

The rejection of claim 1 above serves as the basis for the following. As per claim 4, Lingis does not teach intersecting slots. Lott teaches nozzle slots (50) that intersect each other, wherein one of the slots is intersected by each of the slots, and where a first and second as well as third and fourth slot intersect each other. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the nozzle slot geometry with the intersecting nozzle slot geometry as taught by Lott in order to customize a spraying pattern. As per claim 7, neither Lingis nor Lott teach a ratio of length to slot height as being between 1 and 20, however it would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the size of any slot in regards to size and height, as it is well known in the art to produce nozzle slot sizes in any height and length.

Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,664,733 to Lott.

The rejection of claim 10 above serves as the basis for the following. Lott does not teach slot intersecting at an angle of 0 and 15 degrees, however it would have been obvious to one having ordinary skill in the art at the time the invention was made to have duplicated the nozzle pattern of Lott in an axial direction to produce intersecting nozzles that would have an included angle of 0 and 15 degrees, intersecting at the inlet face of the nozzle body, as doing so would only require a duplication of parts, in this case nozzle orifices, and it would have been obvious to one having ordinary skill in the art at the time the invention was made to have increased the number of nozzle orifices, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. See *St. Regis paper Co. v. Bemis Co.*, 193 USPQ 8.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure is as follows:

U.S. Patent No. 6464201 to Job

U.S. Patent No. 5622489 to Munro

U.S. Patent No. 5368237 to Fulkerson


U.S. Patent No. 3647147 to Cook

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Hogan whose telephone number is (571) 272-4902. The examiner can normally be reached on Mon-Fri, 7:00a-4:00p EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin P. Shaver can be reached on (571) 272-4720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JSH
7/5/2007


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SUPERVISORY PATENT EXAMINER
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